

## **SPECIFICATION SECTION 01300**

### **PROGRAM OF WORK**

#### **TABLE OF CONTENTS**

1. DESCRIPTION.....	3
2. REQUIREMENTS .....	3
2.1 General .....	3
2.2 Requirements for the Program's Composition and Contents .....	4
2.2.1 The Program's Composition and Contents .....	4
2.2.2 The Schedule's Contents .....	4
2.3 Requirements for Submittal and Approval of the Program .....	5
2.4 Requirements for Updating the Schedule .....	6
3. MEASUREMENT AND PAYMENT.....	6



## **SPECIFICATION SECTION 01300 - PROGRAM OF WORK**

### **1. DESCRIPTION**

This Specification Section prescribes the form and contents of the Program of Work (herein referred to as Program) by the Contractor in accordance with subclause 8.3, Programme of the Conditions of Contract.

The following definitions shall be referred to for proper interpretation of this Specification Section:

Program:	The Program shall govern the execution of the whole Works and shall consist of; all the, schedules, method statements and procedures for construction, assignments of equipment and personnel, testing and trials, drawings, submittals and the like required or mentioned in the Specifications, or required by any other part of the Contract.
Time Schedule:	The time schedule presented in the form of bar chart and showing the data herein specified shall be incorporated in the Program to provide the basis for planning and monitoring the progress of the Works using the Critical Path Method (CPM).

### **2. REQUIREMENTS**

#### **2.1 General**

- (a) The requirements of this Specification Section shall be read in conjunction with and be mutually explanatory with the requirements and provisions stated in subclause 8.3 Programme of the Conditions of Contract.
- (b) Failure by the Contractor to comply with the requirements of this Specification Section shall be considered as a serious default in meeting his contractual obligations.
- (c) Any delay to the Works arising from the Contractor's failure to comply with; subclause 8.3 of the Conditions of Contract and/or this Specification Section will be the subject of the Engineer's consideration at the issue of Taking-Over Certificate, should the Employer chose to exercise his rights under subclause 8.7, Delay Damages of the Conditions of Contract. In this situation the Contractor will be required to demonstrate that the aforementioned delay did not impact the critical path of the Works.
- (d) Unless specifically authorized in writing by the Engineer no work, except mobilization, shall be permitted if the Contractor has not complied satisfactorily with the requirements of this Specification Section and/or the Engineer's approval of the Program has not been given.

## **2.2 Requirements for the Program's Composition and Contents**

### **2.2.1 The Program's Composition and Contents**

- (a) The Program shall incorporate, in detail, all activities related to the Works from their commencement to their completion, taking into account all the main items introduced in the Bill of Quantities for each component of the Works.
- (b) The Contractor shall comply satisfactorily with the requirements of subclause 8.3, Programme of the Conditions of Contract.
- (c) The Program shall include, but not be limited to, the following:
  - (i) The Time Schedule (showing the critical path);
  - (ii) The Contractor's mobilization and demobilization plan;
  - (iii) All submittals and drawings;
  - (iv) All plans and schedules;
  - (v) All activities for Site investigation;
  - (vi) All surveys and laying out;
  - (vii) All key and milestone dates (such as the dates for submittals of schedule, the dates for; mobilization, the commencement/completion dates for the works of soft soil treatment, bridge construction, sub-base, Engineers' accommodation, etc.);
  - (viii) All interface dates between the Contractor and subcontractors for the Works;
  - (ix) All activities associated with the procurement, purchase, fabrication and shipment of goods, materials, and equipment to be incorporated into the Works;
  - (x) All public and Site holidays;
  - (xi) Other activities that the Engineer may require for monitoring.
  - (xii) Time/Distance Diagram(s)
  - (xiii) Cash flow chart which reflect the Time Schedule and the duration of the activities within the Time Schedule.

### **2.2.2 The Time Schedule's Contents and Ancillary Requirements**

- (a) The Time Schedule shall include a narrative statement and a logic breakdown of major activities. The narrative statement shall comprehensively describe the work execution plan, the achievement of milestones and any intermediate dates, the outline method statements for the major work items, Temporary Works and the like. It shall fully explain the reasons for the main logic links in the Time Schedule, and shall include particulars on how activity durations are established.

- (b) The detail and number of activities incorporated in the Time Schedule shall be sufficient to manage the total Works and to identify restraints, delays and effects on the Works by dependent activities.
- (c) All the activities shall be organized in a logical work breakdown structure, indicating work stages and phases and shall have a code number for identification related to the work breakdown structure as well as a unique description.
- (d) The Time Schedule shall show; activity durations, activity descriptions, early and late start and finish dates (all of them expressed in calendar days), activity float and activity dependencies and shall apply the Critical Path Method (CPM) of scheduling with all activities having only one start date and only one finish date.
- (e) The preparation of the schedule shall follow current good practice and use the latest software
- (f) All activities shall be cost loaded (as appropriate)
- (g) All activities shall be resource loaded (as appropriate), indicating all manpower and/or equipment necessary to accomplish each activity within the given duration.
- (h) Any activity having or creating an imposed constraint on the Schedule shall be clearly defined and fully described. The use of constraints shall be avoided where possible.
- (i) The Time Schedule shall be prepared using original software licensed by the manufacturer and approved by the Engineer.
- (j) The Contractor shall supply the Engineer with one original new software program licensed with the provider in the name of the Engineer; of same type and model used for the preparation of the Time Schedule by the Contractor. Pirated software shall not be used.
- (k) The software program used by the Contractor to generate the Time Schedule shall be supported by proprietary third party software that is capable of generating time distance diagrams and cash flow charts (Microsoft Excel not acceptable). An original of these programs shall be supplied to the Engineer.

## **2.3 Requirements for Submittal and Approval of the Program**

- (a) The Contractor shall comply without delay with the requirements of subclause 8.3, Programme of the Conditions of Contract and the requirements herein specified regarding the composition and contents of the Program.
- (b) After the Program has been reviewed by the Engineer, the Contractor shall, within 14 days after receiving the Engineer's comments on the Program, incorporate the required corrections or modifications into the Program and resubmit it to the Engineer for further review.
- (c) No more than two submittals of the Program are required for the Engineer's review, provided however that:

- (i) If additional submittals are required by actions or inactions of the Contractor any delays shall be the Contractor's responsibility.
- (ii) Any additional costs that may be incurred by the Employer or the Engineer due to the review of the Program more than twice shall also be the responsibility of the Contractor.
- (iii) The Employer may at any time, after advising the Contractor of such additional costs for submittal review, recover such costs from money due to the Contractor.

## **2.4 Requirements for Updating the Time Schedule**

The approved Time Schedule shall be updated on a monthly basis to reflect the actual work accomplished at the end of each month and to facilitate the monitoring of payments.

An activity report, generated by the schedule computer Program, shall be attached as an appendix to the Contractor's monthly report.

The monthly report shall include the following information on each activity:

- a) Activity identification number and description;
- b) Activity duration expressed in calendar days;
- c) Early and late start and finish dates for each activity, as well as planned start and finish dates;
- d) Calculated total float and free float for each activity;
- e) Predecessors(s) and successor(s), accompanying relationships and lag/lead duration(s) for each activity;
- f) Imposed time or date constraints on each activity;
- g) An activity calendar;
- h) Critical path delay; and
- i) All activities that have a negative float shall be identified and analyzed to identify the impact on the timely completion of the Works.

## **3. MEASUREMENT AND PAYMENT**

### **3.1 Basis for Payment**

The supply, maintenance and updating of the Program of Work including the cash flow charts and time distance diagrams in accordance with the provisions and requirements of this Specification Section shall be deemed to be Inherently Paid Work, which is included in or distributed among all rates and prices entered in the unit prices of the Bill of Quantities. No separate payment will be made for these items.

Any work not specifically identified in this Specification Section but which is necessary for the Program of Work shall be deemed to be Inherently Paid Work, which shall neither be measured nor paid separately and shall be deemed included or distributed among all the pay items listed in the Bill of Quantities.